PHOTOGRAPHIC INTERPRETATION REPORT

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INTRODUCTION TO THE TALL KING RADAR FACILITY SERIES

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NOVEMBER 1965

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INTRODUCTION TO THE TALL KING RADAR FACILITY SERIES

NOVEMBER 1965

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

INTRODUCTION TO THE; TALL KING RADAR FACILITY SERIES

This report introduces an NPIC series on Sino-Soviet Bloc TALL KING radar facilities. The series will consist of short but detailed individual reports using a standard format, covering all installations containing TALL KING antennas which have been identified on photography, and all additional TALL KING installations identified on future photographic missions. Each report will be based on the best of the latest photographic coverage abailable. It is proposed that when significant changes are identified on photography, superseding reports will be issued.

The TALL KING radar (Soviet designation P-14) is a large, high-powered, land-based, early-warning radar (Figure 1) which operates in the very high frequency range on a frequency from 169 to 175 megacycles. It has a pulse repetition frequency of 185 to 202 pulses per second and an estimated range of approximately 300 nautical miles. 1/ The antenna is a mast-mounted elliptical parabola approximately 115 feet wide and consists of a very lightweight framework that is extremely difficult to identify except on good-quality, large-scale photography. In certain instances, however, even though neither the antenna nor its shadow can actually be seen, the presence of a TALL KING may be inferred from the similarities to known installations, which have a definite "signature."

The signature of the TALL KING radar facility has been determined from a comparison of photography of known TALL KING facilities. The comparison shows that a majority of TALL KING facilities have certain features in common. These features (Figure 2) include 1 single-story antenna building with a TALL KING antenna at 1 end; a single-story

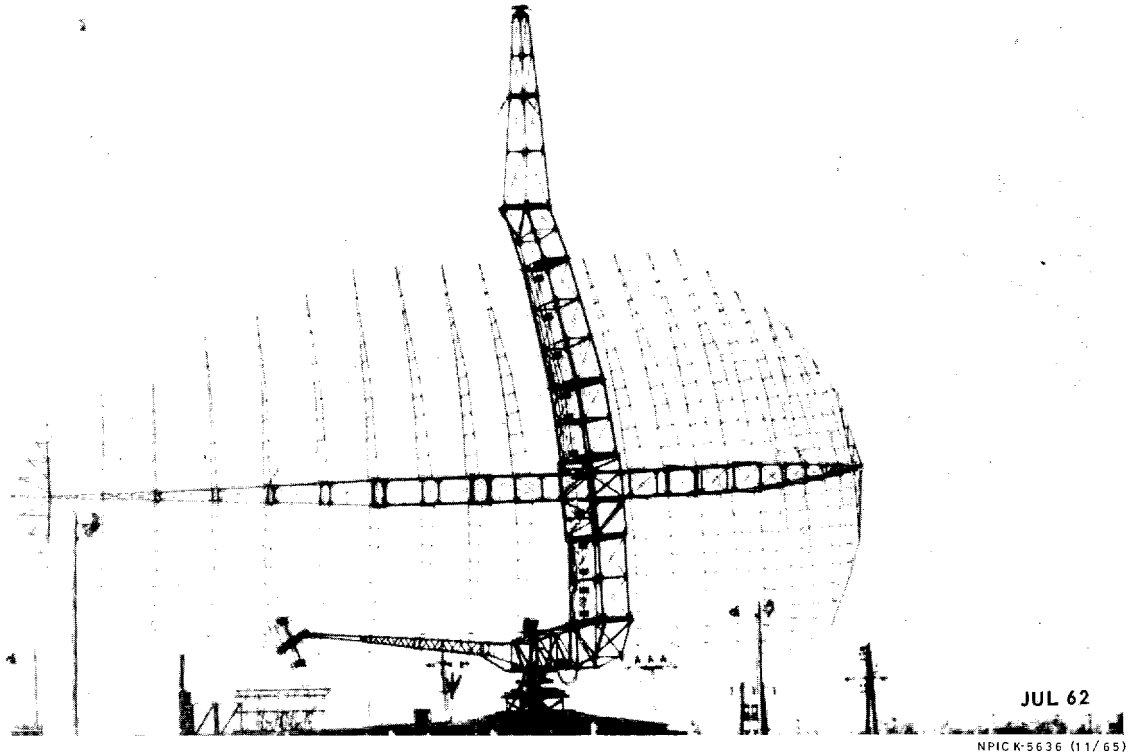

FIGURE 1. TALL KING ANTENNA.

support building [redacted] a separation distance between these 2 buildings ranging from 100 to 150 feet; 1 or 2 small generator buildings [redacted] and at remote locations, a number of horizontal fuel storage tanks neatly arranged in 1 or 2 rows. In addition, each facility is usually isolated from other activity except its own immediate support area.

Some exceptions to this signature have been observed on photography of the Sary-Shagan Antimissile Test Center, the Kapustin Yar/Vladimirovka Missile Test Center, and other locations away from the Arctic areas of the USSR where the TALL KING installations may rely on established local support facilities. In these cases, the fuel storage tanks are not apparent, being either absent or buried. At some sites, such as those near Moscow and Leningrad, the TALL KING is located with other radars and may also be positioned on a bunker rather than its typical control building (Figure 3).

Of special interest is the fact that some TALL KING facilities are unique in having near the principal TALL KING an apparent alternate facility, identical except that it may or may not have the antenna present. This type of facility will be referred to as a "dual site," and each such dual site will be described in a single report.

Three general categories of the functions of the TALL KING radars may be indicated by their titles listed below:

1. TALL KING Facility - used when the only radar present is the TALL KING itself, e.g., "Gizhiga TALL KING Facility, USSR."

2. TALL KING Air Warning (AW) Radar Facility - used when other, associated radars are present in addition to the TALL KING, e.g., "Sortavala TALL KING AW Radar Facility, USSR."

3. TALL KING Air Defense Headquarters (AD HQ) Facility - used when both TALL KING and other AW radar are found associated with an airfield having interceptor-type aircraft and relatively extensive support facilities, e.g., "Khabarovsk TALL KING AD HQ Facility, USSR."

A careful examination of certain of the TALL KING Air Warning (AW) Radar Facilities presented in this series will disclose that a modernization program is in effect. This modernization program, stated in simplest terms, is one in which improved radar components, particularly BACK NET, SIDE NET, and TALL KING radars, are being added to older radar facilities. Generally speaking, the older components are retained and the newer components are added to the facility, producing a rather large installation. It is not unusual to find as many as 12 to 15 radar antennas and a communications site at a given facility.

Another apparent trend noted is that there is a tendency to place AW radar facilities near or adjacent to airfields. This is particularly true of those airfields determined to be Air Defense (AD) Headquarters capable of supporting interceptor aircraft (Figure 4).

Each report will include basic data on the installation, set in boxes at the top; a brief but comprehensive photographic interpretation of the installation; and an annotated photograph from the referenced mission. In the event that the photograph is deemed to be of insufficient quality to enable identification of components, a line drawing will be included instead of the photograph. Notes on the items included in the basic-data boxes are given below.

Installation Name. The installation names will be carried by the Target Data Inventory (TDI) or Bombing Encyclopedia (BE) names unless these conflict with NPIC usage. The complete names will indicate the location and suggest the general function of the facility.

Geographic Coordinates. The coordinates of a selected reference point will be given in degrees, minutes, and seconds as plotted on a US Air Target Chart Series 200 or a USAF Operational Navigation Chart by the photographic interpreter. The reference point in this series will

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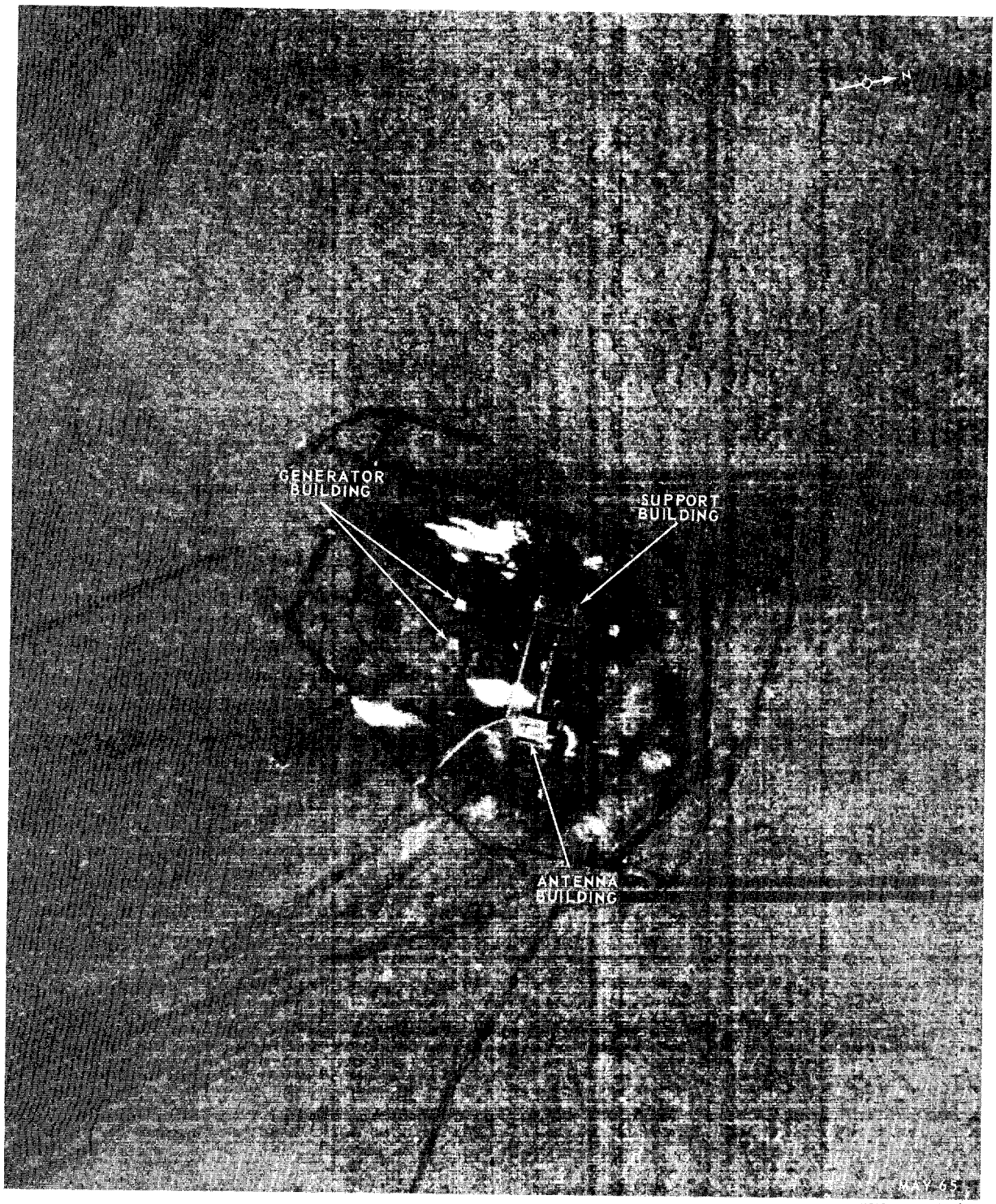

FIGURE 2. GIZHIGA TALL KING FACILITY.

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FIGURE 3. SORTAVALA TALL KING AW RADAR FACILITY.

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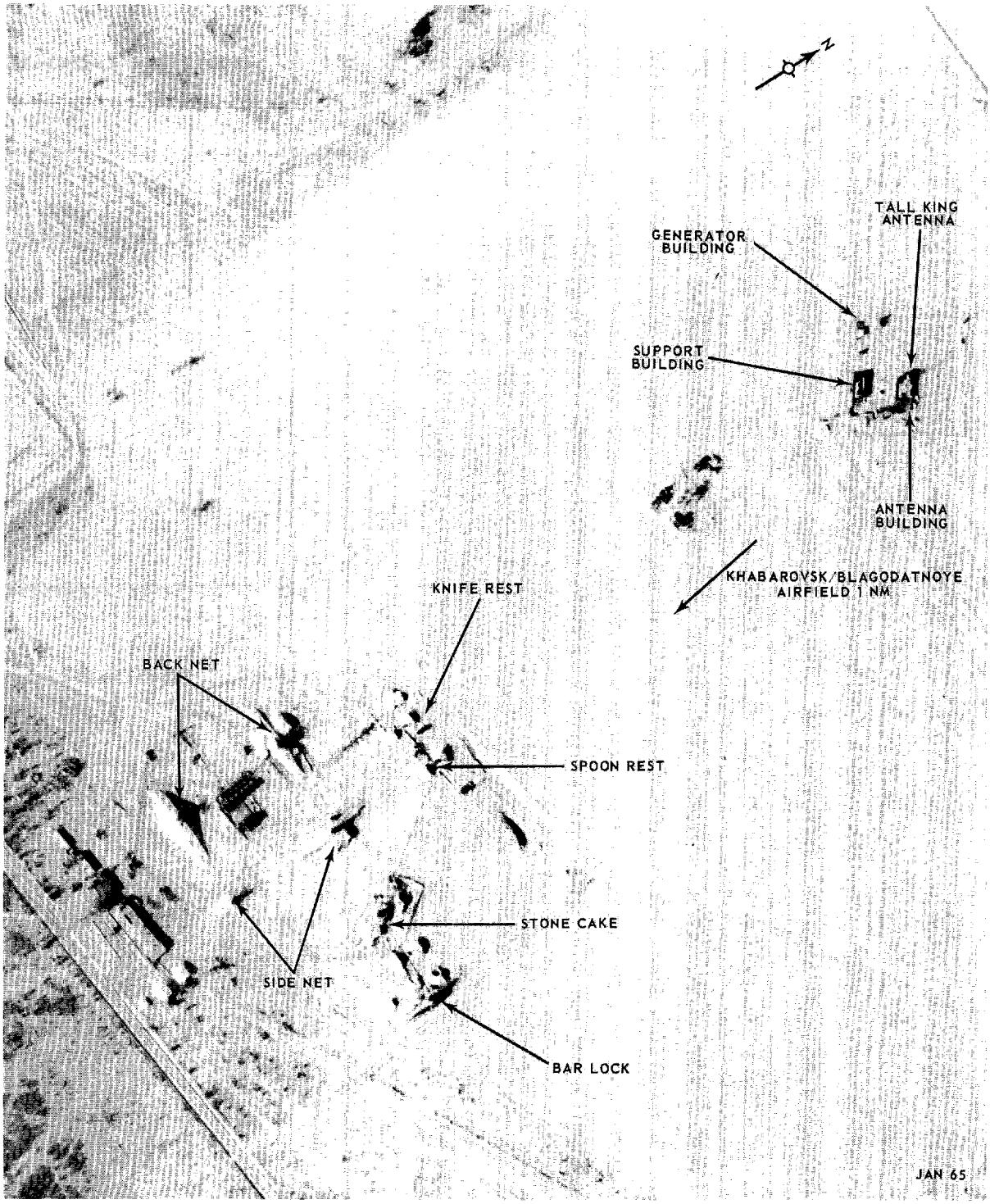

FIGURE 4. KHABAROVSK TALL KING AD HQ FACILITY.

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be the TALL KING radar itself, unless otherwise indicated.

Publication Date. This box contains the month and year the report is published.

NPIC Target Number and BE Number. Each of these is unique to the installation and consists of the WAC number plus identifying digits.

Photography. This box will contain full photographic references for the coverage on which the report is based. These include mission number, number and date of the pass, camera designation (where applicable), frame number, index number for KH-7 photography, Universal Grid No 1 coordinates, weather, limiting conditions (if any), and classification.

AD Area. This box contains a tag identifying the air defense (AD) area in which the facility is situated. This tag is based on a system devised by NSA and which divides the Soviet Union as shown in Figures 5 through 8.

The first element of the tag, the letter F, indicates an electronic installation. The second element, also a letter, indicates the AD district in which the installation is situated, as follows:

Letter	District	Figure
M	Leningrad	Figure 5
K	Western	
U	Moscow	
P	Southwestern	
F	Baku	
W	Sverdlovsk	Figure 6
N	Tashkent	
Y	Northern	
D	Trans-Siberian	Figure 7
E	Far Eastern	Figure 8

These districts have in turn been divided into zones as indicated by the first digit in the tag, and further subdivisions are indicated by the second digit.

Only a 2-letter country indicator will be used in the box when the facility lies outside the Soviet Union.

References. This box will contain data on the map or chart used for plotting the location of the facility, and a citation of this introductory report.

Requirement. This box contains the requester's requirement number.

NPIC Project. This box contains the NPIC project number for the requirement.

Descriptive Information. In addition to the items covered in the boxes at the head of the report, as much description as possible will be given about the installation. The subject headings in this section were selected after detailed evaluation of a number of individual facilities to ensure a comprehensive profile of a given facility. These headings will always occur in the same order: when any particular category does not apply to a given situation, it will be omitted. This omission indicates only nonapplicability; negative information, such as the absence of security measures or the lack of activity, will be noted when observed. The information that will be included under some of these headings is explained below; the other headings are self-explanatory but are included to indicate their place in the standard order of entries and also to suggest the broad scope of photographic interpretation that will be accomplished for each facility. All measurements must be considered approximate.

Location. The distance and direction from the town the facility was named for. The general location of the facility is shown on its adjacent map.

Function.

Construction Status.

Configuration. Single or dual TALL KING antennas will be noted in this entry.

Activity. This entry will note those instances when it is possible to determine from stereo photography that the antenna was rotating.

Security.

Vegetation & Terrain.

Operational Components. This entry will be restricted primarily to antennas but may include certain buildings directly related to the electronic function of the facility. The items will be listed in columnar form followed by the distance and

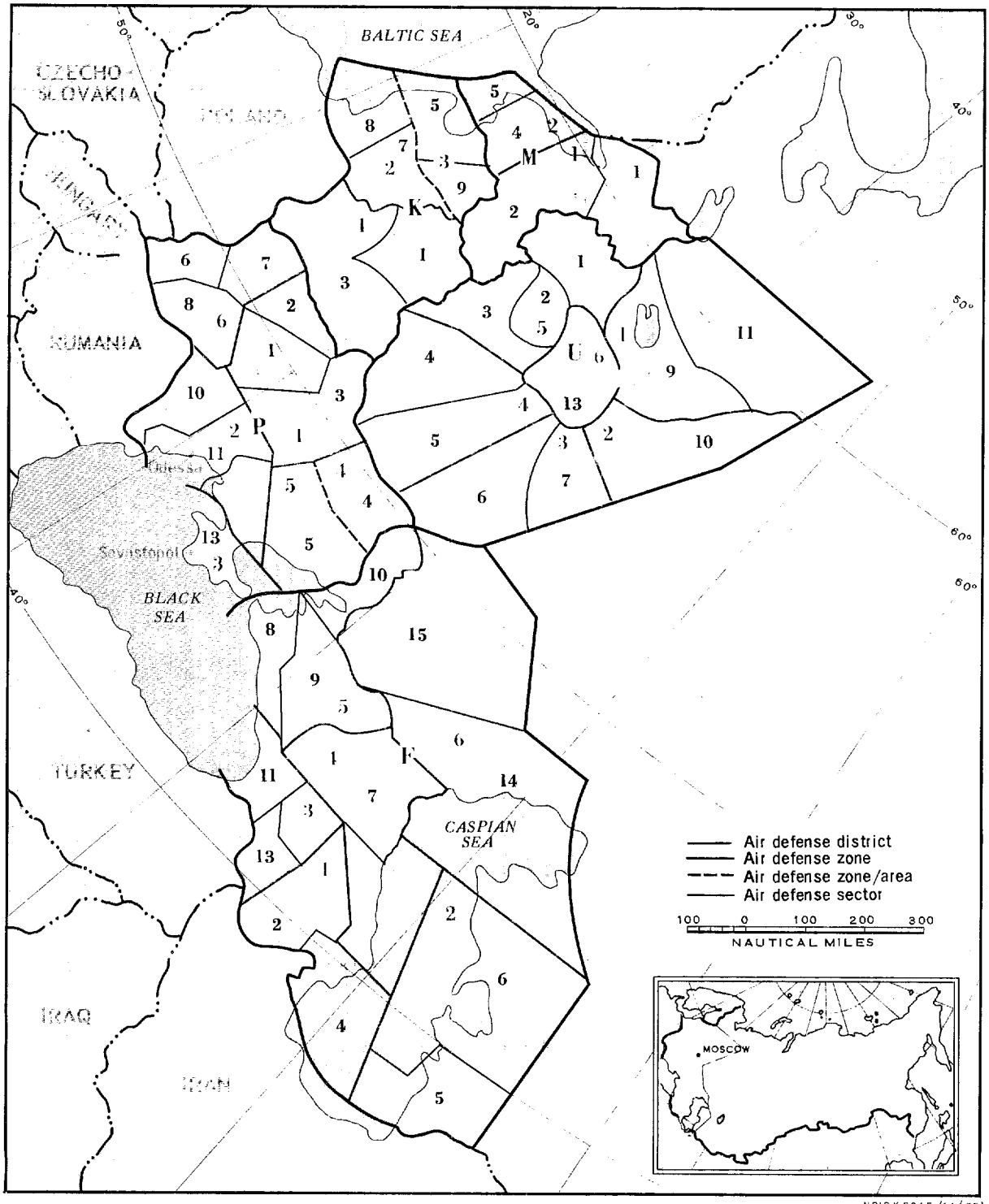

FIGURE 5. WESTERN AIR DEFENSE AREAS, USSR.

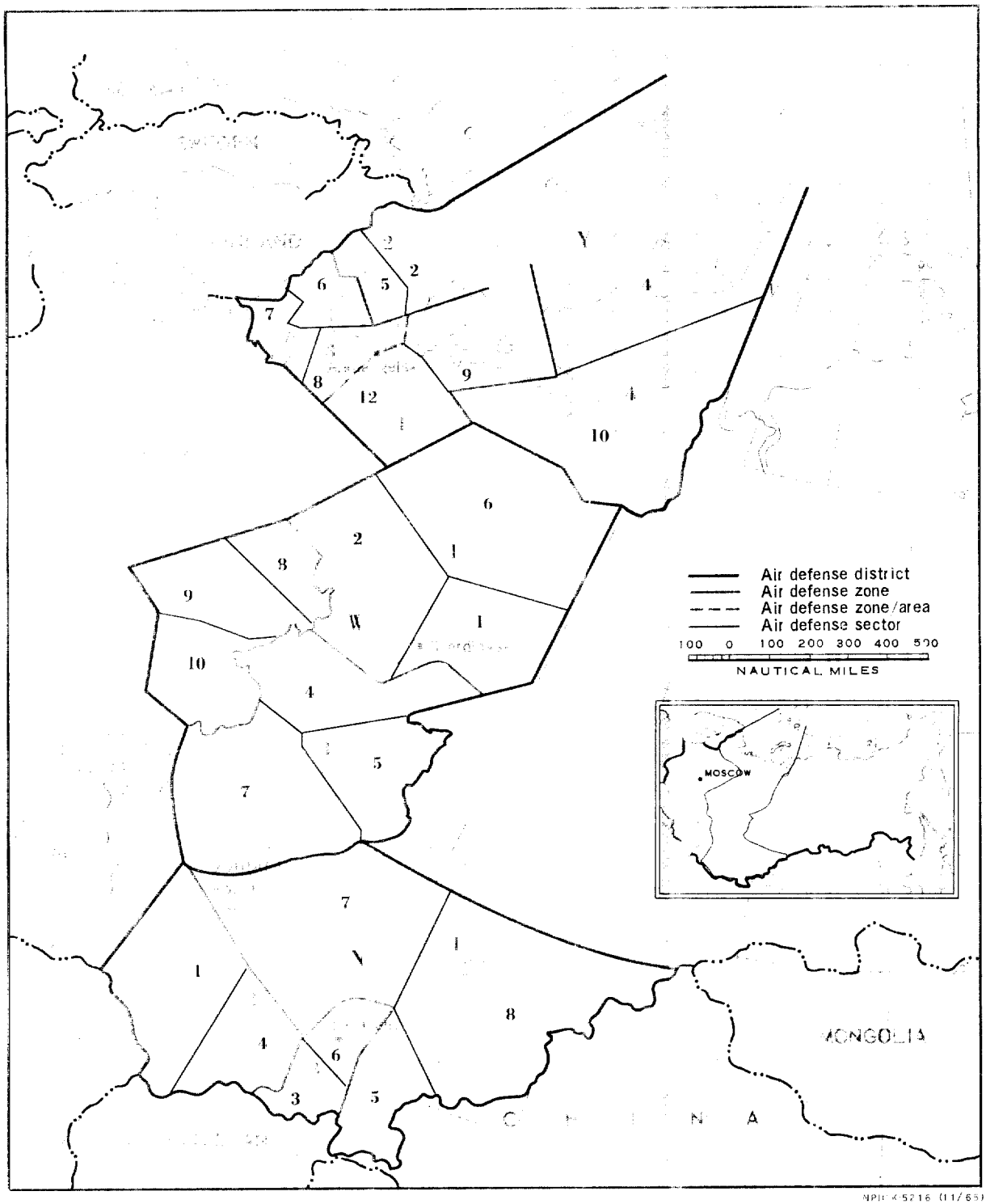

FIGURE 6. SVERDLOVSK, TASHKENT, AND NORTHERN AIR DEFENSE AREAS, USSR.

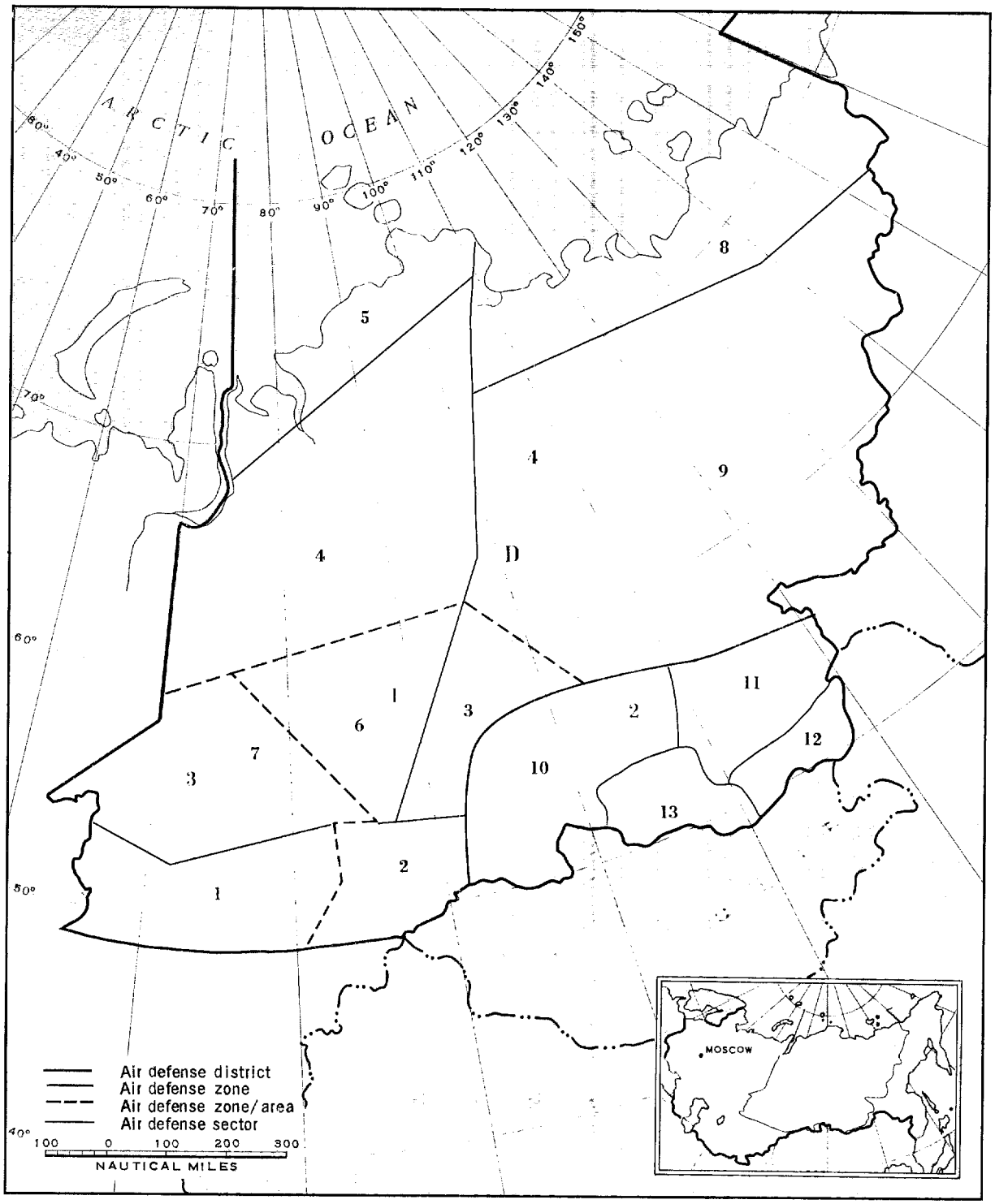

FIGURE 7. TRANS-SIBERIAN AIR DEFENSE AREA, USSR.

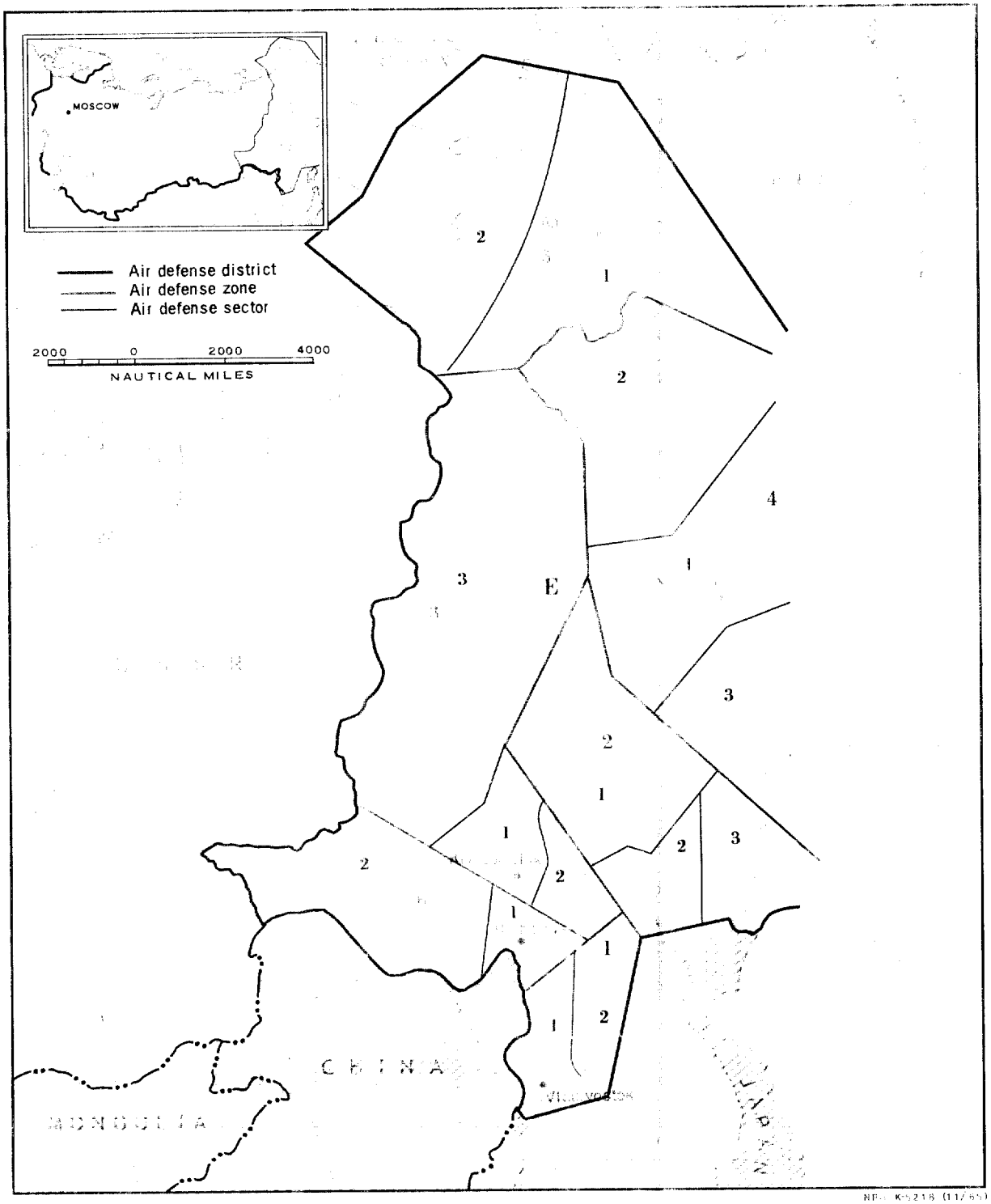

FIGURE 8. FAR EASTERN AIR DEFENSE AREA, USSR.

direction, as determined by the photographic interpreter, of each item from the TALL KING antenna. The items will be named to correspond to the annotations on the accompanying photograph.

Immediate Support Components. The buildings, generators, storage tanks, etc., in the immediate vicinity of the operational components will be described here. Usually they will not be annotated on the photograph.

Unusual Features. Any features not normal to the facility or not normal to the modernization program described above will be included in this entry.

Site Support Facilities. This entry will describe any separate support facilities other than the support components situated in the immediate vicinity of the operational elements of the installation and already noted under a preceding category.

Other Associated Facilities. This entry will include communications facilities and airfields that are considered associated with the TALL KING facilities.

REFERENCES:

MAPS OR CHARTS

CIA. Map 34721, 5-64 (SECRET SAVIN)

DOCUMENT

1. ONI. 26-10A, *Sino/Soviet Bloc Electronic Equipment,* Vol I, pp II-2-72, II-2-73, Apr 63 (SECRET)

REQUIREMENT

NPIC PROJECT

11012/66 (partial answer)